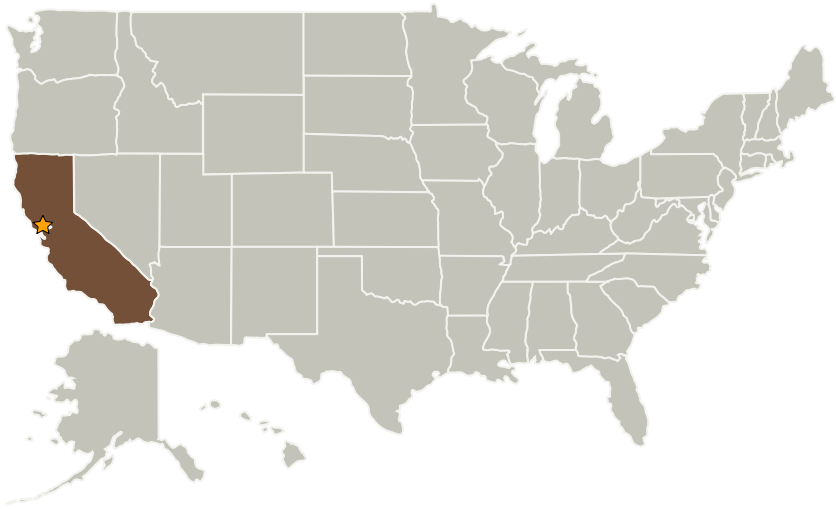
Compact, High Accuracy CO2 Monitor, Phase II

Completed Technology Project (2005 - 2007)

Project Introduction

This Small Business Innovative Research Phase II proposal seeks to develop a low cost, robust, highly precise and accurate CO2 monitoring system. This system will employ a novel mid-infrared laser source, which was successfully demonstrated during Phase I along with a bench-scale laboratory sensor. Quantitative analysis of the Phase I results showed that the goal of determining the mole fraction of CO2 in atmospherically relevant gas mixtures with a precision of 0.05% min-1 was achieved. The Phase II project will significantly refine approach and improve the long term stability such that an onboard gas calibration system needs to operate at most once-per-hour. The resulting compact, fully integrated Phase II prototype will enable completely automated CO2 concentration measurements to be routinely performed with unprecedented accuracy. Commercial systems based on the Phase II prototype will be refined and marketed during Phase III. Additionally, the core technology can be applied for the detection of other target species such as CO2 isotopes, methane, and CO.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Novawave Technologies	Supporting Organization	Industry	Redwood City, California

Primary U.S. Work Locations
California

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.1 Software Development, Engineering, and Integrity
    - TX11.1.2 Verification and Validation of Software systems